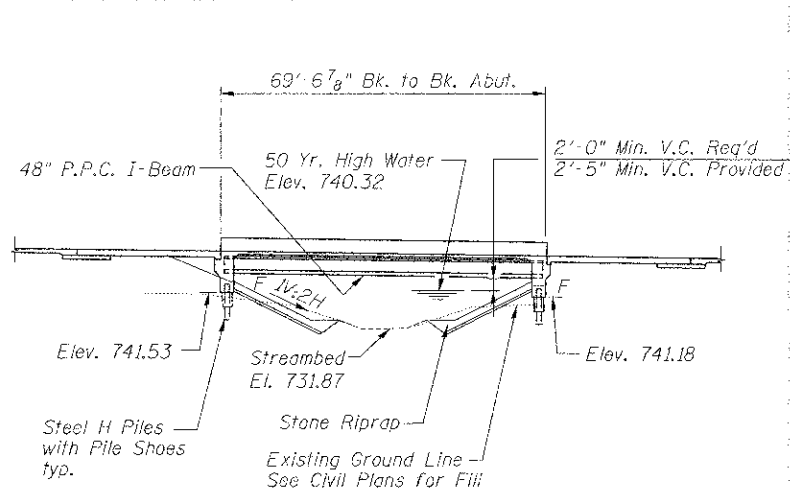
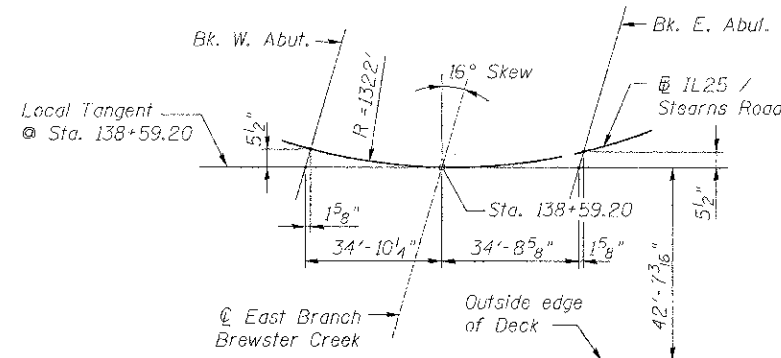


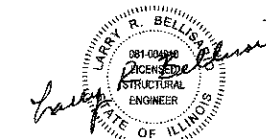
Benchmark BM-24:
 "Aluminum Disk" set in concrete, 0.50± mile east of Stearns Road and
 Dunham Road at the south side of Stearns Road. Elev. 762.678
 No existing structure.



ELEVATION

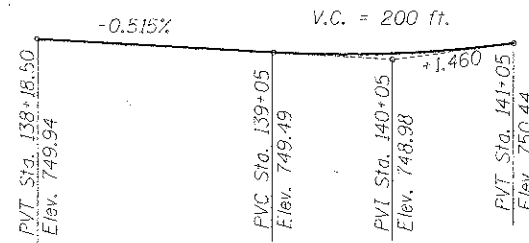


OFFSET SKETCH

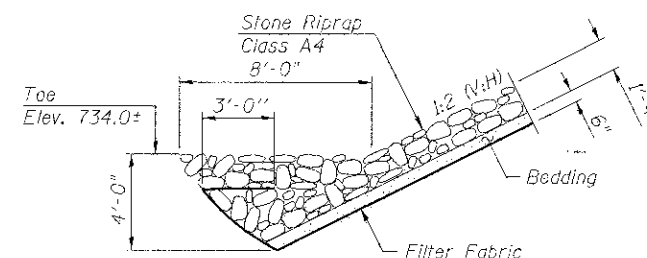


EXPIRATION DATE: 11-30-2014
 DATE: 12-14-2012

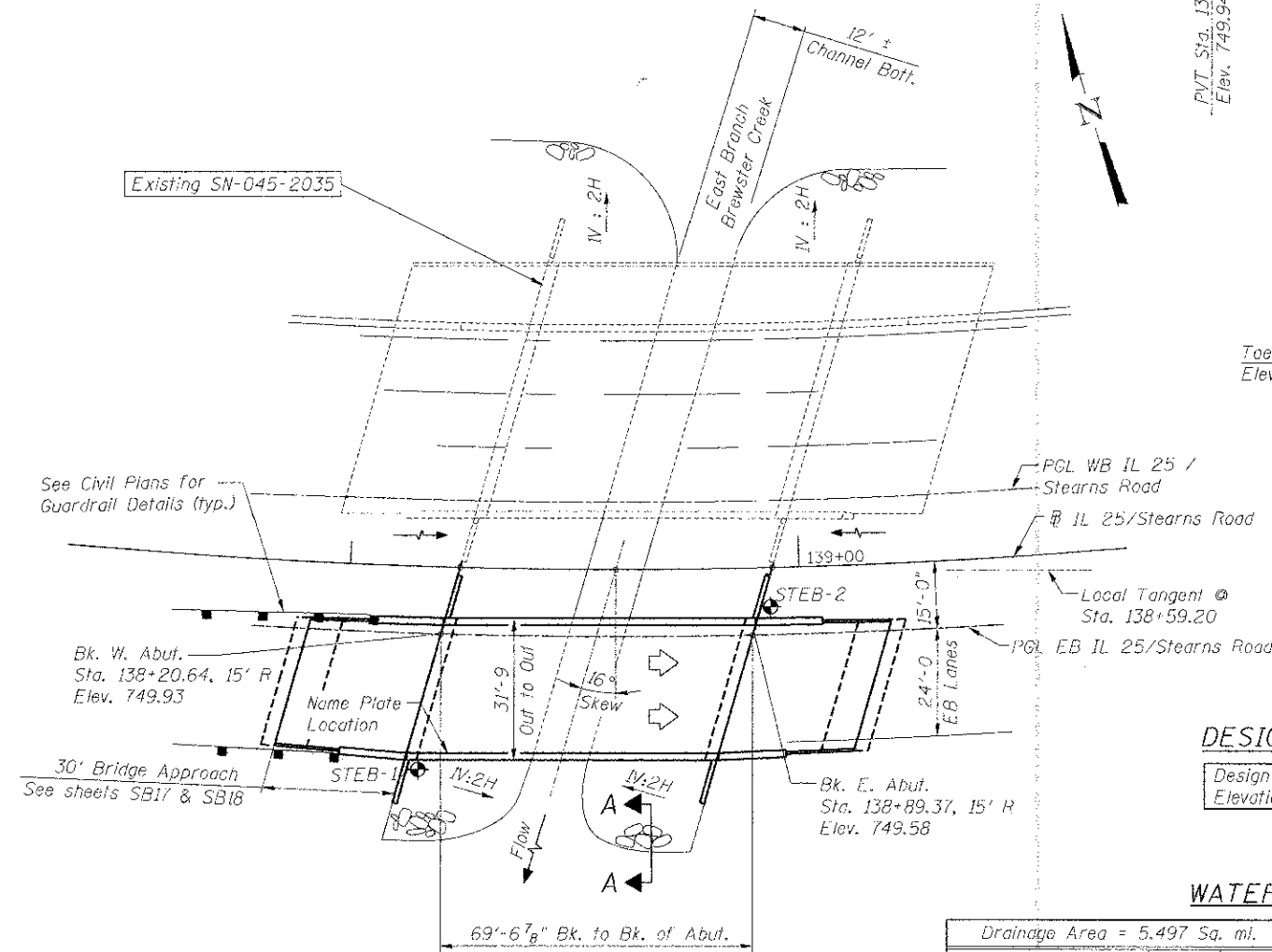
I certify that to the best of my knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current AASHTO Standard Specifications for Highway Bridges.



PROFILE GRADE
 @ IL 25/Stearns Rd.)



SECTION A-A



PLAN



STATION 138+59.20
 F.A.P. 361
 SECTION 06-00214-18-RP
 BUILT 201 BY
 STATE OF ILLINOIS
 LOADING HL-93
 STRUCTURE NO. 045-2033

NAME PLATE

See std. 515001

LOADING HL-93

Allow 50#/sq. ft. for future wearing surface.

DESIGN SPECIFICATIONS

2010 AASHTO LRFD Bridge Design Specifications (5th ed.)

DESIGN STRESSES

FIELD UNITS

$f'_c = 3,500$ psi
 $f_y = 60,000$ psi (reinforcement)

PRECAST PRESTRESSED UNITS

$f'_c = 6,000$ psi
 $f'_ci = 5,000$ psi
 $f_{pu} = 270,000$ psi ($1/2$ " ϕ low lax. strands)
 $f_{pbi} = 201,960$ psi ($1/2$ " ϕ low lax. strands)

CURVE DATA

Along @ IL Rte 25
 $\Delta = 16^\circ 49' 38.31"$ (LT)
 $D = 4^\circ 20' 02"$
 $R = 1322.00'$
 $T = 195.54'$
 $L = 388.26'$
 $E = 14.38'$
 $S.E. = 3.5\%$ LT
 P.C. STA. = 137+52.75
 P.T. STA. = 141+41.01
 P.I. STA. = 139+48.29
 SE Attained Sta. 135+60.34
 to Sta. 138+04.55
 SE Removed Sta. 140+89.21
 to Sta. 143+33.41

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
 Design Spectral Acceleration at 1.0 sec. ($S_{1.0}$) = 0.08 g
 Design Spectral Acceleration at 0.2 sec. ($S_{0.2}$) = 0.14 g
 Soil Site Class = D

DESIGN SCOUR ELEVATION TABLE

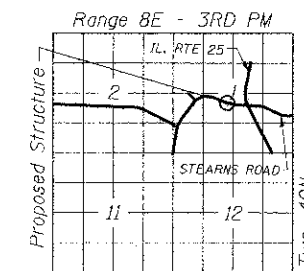
Design Scour Elevation (ft.)	W. Abut.	Piers	E. Abut.
	741.53	NA	741.18

WATERWAY INFORMATION

Drainage Area = 5.497 Sq. mi.

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.L.	Head Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	50	529	N/A	302.8	740.32	N/A	0.04	N/A	740.36
Base	100	678	N/A	331.7	740.65	N/A	0.07	N/A	740.72
Overtopping	>500**	4412	N/A	474.7	N/A	N/A	N/A	N/A	749.00
Max. Calc.	500*	1000	N/A	352.0	741.32	N/A	0.17	N/A	741.49

* 500-Year Flowrate determined from analytical frequency curve - WSEL'S Extrapolated
 ** Overtopping occurs above the 500-Year WSEL under proposed conditions



LOCATION SKETCH

GENERAL PLAN & ELEVATION
 IL 25/STEARNS ROAD OVER THE
 EAST BRANCH OF BREWSTER CREEK
 F.A.P. 361 - SEC. 06-00214-18-RP
 KANE COUNTY

STATION 138+59.20
 STRUCTURE NO. 045-2033

benesch
 engineers · scientists · planners
 Alfred Benesch & Company
 205 North Michigan Avenue, Suite 2400
 Chicago, Illinois 60601
 312-665-0450 Job No. 10074

FILE NAME	USER NAME	DESIGNED	REVISIONS
0452033-201-0PE.dgn	prgrm	RJT	
		AJK	
		RMG	
		AJK	

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
361	06-00214-18-RP	KANE	451	316

CONTRACT NO. 63598
 ILLINOIS FED. AID PROJECT

SHEET NO. SBI OF SBI9 SHEETS

I:\20000s\10074\Engineering\Documents\Phase II\SN_045-2033-Brewster_Creek\Plans\0452033-201-0PE.dgn
 8:34:10 AM
 1/5/2013